WHAT IS CLAIMED:

1. A process for the production of an olefin oxide, which process comprises reacting a feed comprising an olefin and oxygen in the presence of a silver-containing catalyst, wherein before the catalyst has reached an advanced stage of ageing the reaction temperature is above 255 °C and the olefin content of the feed is above 25 mole-%, relative to the total feed.

2. A process as claimed in claim 1, wherein the olefin is ethylene.

3. A process as claimed in claim 1, wherein the olefin content of the feed is in the range of from 30 to 80 mole-%.

4. A process as claimed in claim 3, wherein the olefin content of the feed is in the range of from 35 to 70 mole-%.

5. A process as claimed in claim 1, wherein the olefin content of the feed is maintained at the value as defined for at least a period which is sufficient to effect an olefin oxide production of at least 1000 kmole of olefin oxide per m^3 catalyst bed.

6. A process as claimed in claim 1, wherein the reaction temperature is in the range of from 260 to 325 °C.

7. A process as claimed in claim 6, wherein the reaction temperature is in the range of from 270 to 310 °C.

8. A process as claimed in claim 1, wherein the reaction temperature is maintained at the value as defined for at least a period which is sufficient to effect an olefin oxide production of at least 1000 kmole of olefin oxide per m^3 catalyst bed.

9. A process as claimed in claim 1, wherein "an advanced stage of ageing" of the catalyst is defined by a cumulative olefin oxide production of at least 10,000 kmole of olefin oxide per m^3 of catalyst bed.

10. A process as claimed in claim 1, wherein "an advanced stage of ageing" of the catalyst is defined by a cumulative olefin oxide production of at least 2000 kmole of olefin oxide per m^3 of catalyst bed.

11. A process as claimed in claim 1, wherein "an advanced stage of ageing" of the catalyst is defined by a cumulative olefin oxide production of at least 1000 kmole of olefin oxide per m^3 of catalyst bed.

12. A process as claimed in claim 1, wherein the catalyst comprises, in addition to silver, rhenium or compound thereof, and a rhenium co-promoter selected from tungsten, molybdenum, chromium, sulfur, phosphorus, boron, and compounds thereof.

13. A process for the production of an olefin oxide, which process comprises reacting a feed comprising an olefin and oxygen at a reaction temperature above 255 °C and an olefin content of the feed above 25 mole-%, relative to the total feed, in the presence of a silver-containing catalyst which has not reached an advanced stage of ageing.

14. A process as claimed in claim 13, wherein the olefin is ethylene.

15. A process as claimed in claim 13, wherein the olefin content of the feed is in the range of from 30 to 80 mole-%.

16. A process as claimed in claim 15, wherein the olefin content of the feed is in the range of from 35 to 70 mole-%.

17. A process as claimed in claim 13, wherein the reaction temperature is in the range of from 260 to 325 °C.

18. A process as claimed in claim 17, wherein the reaction temperature is in the range of from 270 to 310 °C.

19. A process as claimed in claim 13, wherein "an advanced stage of ageing" of the catalyst is defined by a cumulative olefin oxide production of at least 10,000 kmole of olefin oxide per m^3 of catalyst bed.

20. A process as claimed in claim 13, wherein "an advanced stage of ageing" of the catalyst is defined by a cumulative olefin oxide production of at least 2000 kmole of olefin oxide per m^3 of catalyst bed.

21. A process as claimed in claim 13, wherein "an advanced stage of ageing" of the catalyst is defined by a cumulative olefin oxide production of at least 1000 kmole of olefin oxide per m^3 of catalyst bed.

22. A process as claimed in claim 13, wherein the catalyst comprises, in addition to silver, rhenium or compound thereof, and a rhenium co-promoter selected from tungsten, molybdenum, chromium, sulfur, phosphorus, boron, and compounds thereof.

23. A method of using an olefin oxide for making a 1,2-diol, a 1,2-diol ether or an alkanolamine comprising converting the olefin oxide into the 1,2-diol, the 1,2-diol ether or the alkanolamine, wherein the olefin oxide has been obtained by a process as claimed in claim 1.